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Positive Feedback ISSUE 54
march/april 2011

hardware

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Brian Damkroger - June 2010
stereophile

psi audio

A-17-M Loudspeakers

as reviewed by Roger S. Gordon

Over the years I have heard many different speakers, both production and prototypes. The speakers have used every conceivable method to move air in accordance with a changing electrical signal. The designs of these speakers have ranged from

ROGER S. GORDON'S SYSTEM

LOUDSPEAKERS
VMPS RM 30 floor standing speakers (-3dB at 37Hz) with VMPS Large subwoofer upgraded to VSS specifications (-0dB at 20Hz). VMPS Ambiance Tweeters.

ELECTRONICS
deHavilland Aries 845-G single ended triode mono block amplifiers on main speakers with two Dayton Loudspeaker 500 watt plate amps (class AB) with variable crossover and single band parametric equalizer on dual voice coil subwoofer. Herron Audio VTPH-2 phonostage and VTSP-3 preamplifier, VacuumState JLTI phonostage, and H.H. Scott 130 stereo preamp with selectable phono equalization.

SOURCES
Turntables: Nakamichi TX-1000 and Garrard 401 with skeletal plinth. Tonearms: Schroeder Reference, Moerch DP-6 with Teres Audio VTA Adapter and red dot and blue dot 12" armwands, and VPI 12.5 with two armwands. Stereo MC cartridges: Van den Hul Colibri Mk.2 XPW and Condor XGM, Miyajime Shilabe, Nakamichi MC1000, ZYX UNIverse S-SB, and three Audio Technica OC9/II cartridges. Stereo MM cartridges: Empire ERD-9 and Empire 750 LTD. Mono MC cartridges: ZYX R1000 AiryM-X-SB and Denon 102. Sony SCD-1 with Modwright Absolute Truth Mod, plus SuperClock II, Superclock II Power Supply, and Richard Kern's Transport Mod.

CABLES
Bent Audio phono cable that includes terminal box for swapping resistors to change cartridge loading, Purist Audio Venustas and Audio Magic Sorcerer interconnects for connecting equipment to preamp, Harmonic Technology Cyberlight P2A with battery Pack IV for connecting preamp to amps, and Audio Magic Sorcerer bi-wire loudspeaker cables.

LINE CONDITIONERS AND AC
Sound Application XE-12 cryoed with Elrod Power Systems 3 Signature power cord and Audio Magic Stealth Matrix with Audio Magic Illusion 4D power cord. Power cords: Audio Magic Excalibur and Illusion 4D, Coincident, Purist Audio Design Venustas, Silent Source, and Wireworld Electra III+.

engineering marvels to 'what the heck were they thinking'. One area of speakers that I have been intrigued by, but have not had much hands-on experience with, are pro audio speakers. I am not thinking of the huge arrays of speakers that are used at rock concerts and stadiums, but rather the speakers that are used in recording studios. These speakers have a reputation for being highly accurate though perhaps too analytical for home use. Over the years I have heard the LS3/5A and several different Harbeth speakers all of which are used by the BBC in their studios. These BBC studio monitors have sounded very nice and have an excellent reputation. However, I knew there were other pro audio speakers out there that deserved a listen.

Through a friend who is in the Hi End audio business, I was able to hear a pair of Adam speakers. Adam is a pro audio company located in Berlin, Germany. The speaker that I was listening to was a very small, two way, powered monitor with a retail price of US$1,000. For the money I thought it sounded very good. When my friend became the USA distributor for two other pro audio speaker lines I was able to hear powered studio monitors from PSI Audio of Switzerland and Manger of Germany.

Powered loudspeakers have always intrigued me. It is difficult to design an amplifier that will drive all loudspeakers—compromises have to be made. The same goes for loudspeaker design. Loudspeakers have to be driven not by theoretically perfect amplifiers, but by real world amplifiers. Again compromises are necessary. However, if you are designing a powered speaker, each driver can be perfectly matched to its own amplifier. In addition, there are no speaker cables of unknown resistance, capacitance and inductance to add additional variables. A properly designed powered speaker should sound very good.

When my friend offered to let me take home a pair of the PSI powered speakers to audition I readily agreed. PSI Audio's entire product line consists of four different studio monitors, a center channel, a subwoofer, and a floor standing studio monitor. The four studio monitors cost approximately US$1000, US$3500, US$5000, and US$9000 - essential one product at each price point. The speakers I brought home were the $3500 A-17-M. These are small speakers (w x h x d 200 x 320 x 230 mm or 8 x 12.5 x 9 inches). They only weigh 8.4 kg or 18.5 lbs. The speaker cabinet contains a 25mm or 1" dome tweeter and a 175 mm or 6.5 inch woofer plus two class AB amplifiers—one for each driver. The small size of the speaker means that it can not deliver low and/or thunderous bass. The speakers start to roll-off at 70Hz and are 3dB down at 50Hz and 6db down at 44Hz. However, they are studio monitors so they can play loud. The factory says that a pair can play 115 dB continuously. This is one claim I did not try to test.

ACCESSORIES
Room Treatment: Listening room designed by Rives Audio utilizing materials from RPG, Inc. and self constructed ceiling panels designed by Rives Audio (See PFO Issue 21). Acoustic Science Corporation Tube Traps used to control bass and diffusion (See PFO Issue 32). Acoustic Revive RR-77 with King Rex power supply. Vibration Control: Nakamichi Turntable - Lead Balloon stand with the legs filled with a mixture of kitty litter, sand, and lead shot, with 3" maple butcher-block, and Stillpoints supporting turntable plus Harmonix TU-812Mk2 record weight and TU-800EX turntable mat. Garrard 401 - Polycrystal Rack with Herbies Audio Lab Grunge-Buster platter mat. Electronics - Black Diamond Racing Cones under phonostage and pre-amp; Silent Running Audio 3" VR isolation stands under Sony SCD-1 and deHavilland tube amps. Tubes - Herbies Audio Lab HAL-O tube dampers on all vacuum tubes. EMI and RFI Control: Bybee speaker filters, two pairs.

In their literature PSI Audio provides frequency response and acoustic phase response graphs for each of its speakers. Also, included in the box with each speaker are the graphs for that individual speaker—sort of like the frequency response curve graph found in the box with many of the better phono cartridges. The frequency response for the A-17-M is supposed to be +/- 2.5dB from 50 to 20k Hz. The phase tolerance graph

is +/- 45 degrees from 150 to 20K Hz. PSI Audio says that the reason why their speakers are so accurate is because of this attention to frequency and phase response. White papers on the technology used with additional graphs can be found at http://www.psiaudio.com. Regardless of the technology used, the true worth of any speaker is found in the listening.

I set the A-17-Ms up on stands my friend had lent me. Brand new out of the box the speakers were a bit bright. However, after about ten hours, the speakers were broken in and the sound did not change after that. These being powered speakers I plugged them directly into a wall outlet per my friend's recommendation. I did a little experimentation with power cords. The speakers do sound better with more expensive power cords.

Positioning the speakers took a little time. The instruction manual said that the speakers and the listener should form an equilateral triangle. I tried that arrangement and also with the speakers further apart. There are tradeoffs with moving the speakers wider apart. Further apart they throw a bigger soundstage. However, the further away the speakers are from the listener the less detail. Studio monitors are designed to be highly directional so as to minimize reflections from the side walls, floor, and ceiling. The sweet spot is only a meter or so wide, if that. If you want maximum detail you have to sit in the near field so that you hear the music before it gets muddied by the reflections from the sidewall, ceiling, and floor. However, if you are too close to the speakers and you are listening to multiple instruments you lose the cohesion of the music. What I mean by this is imagine you are in a concert hall listening to an orchestra. If you sit in the front row you hear incredible detail. You can pick out notes of individual instruments. What you are hearing are the individual sounds of eighty different instruments not an orchestra. At that close distance the sounds do not blend into a cohesive whole. If you sit in the last row you can hear an orchestra playing. You don't hear the detail of row one, but can you hear the entire orchestra playing as an ensemble. You can not hear this in row 1. By choosing which row you sit in you can change the balance between detail and cohesion. With the A-17-Ms, as you bring them closer, detail goes up but cohesion goes down. Where you end up placing the A-17-Ms is a matter of personal preference. I ended up with the speakers in an equilateral triangle with eight foot sides. The speakers were aimed at a spot one foot behind my head and six inches above my ears.

If you want the very best sound from these speakers you do have to waltz them around the room until you find the right spot. However, if you are not fanatical, these speakers will still play very well if you just *plonk* them down and aim them at a point just behind the listening position. While I was waltzing the speakers around the room, they never ceased to throw a wide, deep soundstage with lots of detail.

Once I had speakers positioned I played a number of CDs of different types of music. The speakers were dynamic with lots of slam. Rock music was great except that the lack of low bass robbed the music of its visceral impact. With classical music too much of the low frequency hall sound that adds ambiance to a recording was absent. Cellos playing in the low register didn't have that characteristic warm, mellow growl. Bass vocals did not have their usual chesty sound. The factory rates the speakers at -6dB at 44Hz. However, the speakers start rolling off at about 70Hz. I guess you can not make a mini-monitor sound like a full range speaker. At this point I turned on my VMPS Larger subwoofer and kept it in for the rest of my listening.

The A-17-Ms were actually designed to be used with the PSI Audio subwoofer. On the back of the A-17-Ms are two controls. One is a volume control that can cut the volume of the speaker by 0 to 20dB. The other control rolls off the speaker's woofer by 0 to 10dB with a 6dB slope starting at about 200Hz. After setting the roll off at -10dB I had no problem blending my subwoofer with the A-17-Ms. Looking at the frequency response curve using pink noise and my 1/3rd octave frequency analyzer I was amazed at how flat the frequency response was down to 30Hz.

With the subwoofer on I again started playing lots of different music—rock, classical, new age, soundtracks, blues, world music, ethnic, etc. Everything sounded fine. I then started my critical listening by playing the test CDs that I take to the audio shows. I have played certain tracks of these CDs on hundreds of speakers. Two of the tracks

are torture tracks. The first is the "Grand Chorale" from Truffaut's movie *Day for Night.*(1) A minute into the track a piccolo trumpet enters at high volume in its upper register. Quite a number of tweeters can not handle this sound. The tweeters chatter, the sound breaks up, or the treble distorts. The second torture track is the extended version of the opening credits to the Japanese TV series *Ghost in the Shell: Stand Alone Complex.* The track consists of a female Russian vocalist, Origa, who sings in both Russian and English a drum track plus synthesizer. On some systems this music at volume becomes an unlistenable shrill, harsh, congealed mass. The A-17-Ms played both of these test tracks without the slightest misstep.

The next two test tracks were instrumentals: The "Grindhouse Blues" from the soundtrack of the movie *Planet Terror* and the "Main Theme" from the soundtrack of the movie *Fort Saganne*. "Grindhouse Blues" is a superbly recorded ensemble of acoustic guitar, electric guitar, bass, sax and drums. Through the A-17-Ms the instruments sounded like the real instruments without noticeable colorations. The instruments were properly presented in three dimensional space though the images were more two dimensional than three. The *Fort Saganne* piece is for cello with orchestral accompaniment. The cello sounded like a cello with the appropriate richness and resonance in the lower register.

The next test tracks were female and male vocals: The aria Ebben? Ne Andro Lontano from Cantalani's opera *La Wally* (Philharmonia Orchestra with Lesley Garrett, soprano) and Israel Kamakawiwo'ole's *White Sandy Beach of Hawaii*. In both cases the voices sounded natural with no noticeable colorations.

The final two tracks were bass test tracks. On these tracks, the low bass was coming from the subwoofer. However, with the subwoofer's crossover set at 60Hz with a 24dB roll-off the A-17-Ms were supplying most of the mid bass and all of the upper bass. The two test tracks come from two film scores by Alan Silvestri: "Transylvania 1887" from the movie *Van Helsing* and "I did not win the Race" from the movie *Beowulf*. The bass on these tracks was dynamic. The drum whacks were solid and tight. Heavy metal devotees can head bang to these speakers (with a sub).

After listening to these tracks I concluded that the A-17-Ms were accurate speakers in that they produce what was on the CD without noticeable colorations. The sound was extremely detailed. These speakers make a fine analytical tool for seeing into the music. I can readily see why recording studios would want to use monitors like these when recording and mastering. The next question to be answered is—do these speakers play music; i.e. do the speakers convey the emotional impact of the music as well as the sound? This means does the sound make me want to wave my air baton, do I bang my head in time with the music, do I get shills down my spine listening to certain passages, at the end of the piece to I jump up and pump my fist in the air, etc. Pure audiophiles only care about sound. However, to music lovers the emotional content of music is more important than the accuracy of the sounds. That is why equipment like the Koetsu Urushi phono cartridge or the Living Voice OBX-R speakers are so loved by their owners. These pieces of equipment, while not totally accurate, convey the beauty and emotion of music like few others.

To test how well a piece of equipment conveys emotion I played several pieces of music that always bring an emotional response from me whenever I hear it. These pieces include two of Lisa Garrard's works: "Savean" from *The Mirror Pool* and "Now We Are Free" from the soundtrack from *Gladiator*. The pieces also include the finale of *Saint Saens 3rd Symphony* (the Organ Symphony), the final movement of Barber's Violin Concerto, and Virgil Thomson's Suite from his score for the film *The River*. I played all of these pieces with the A-17-Ms. Yes, I received an emotional charge from listening to these pieces with the A-17-Ms, but not as much as I receive from my reference system.

At this point I started doing A-B-A comparisons between my reference system and the A-17-Ms. The retail price of my speakers, amps, speaker cables, amp power cords and amp line conditioners is over US$20,000. This is almost six times the price of the A-17-Ms. This was not a fair comparison, but I found the differences revealing. Sitting in the near field of the A-17-Ms provides slightly more detail than sitting in the far field of my VMPS RM30 speakers. On the other hand, the ribbon tweeter of the RM30s is

far superior to the dome tweeter of the A-17-Ms. The ribbon tweeter can not play as loud as the dome tweeter (one of the design trade-offs), but it is smoother and handles the music with much more finesse and subtlety. While the width and depth of the soundstage is pretty much the same between the two systems, the images created within the soundstage with the reference system are three dimensional and very life-like. The images created by the A-17-Ms are flattened from front to back. While the A-17-Ms are very dynamic and can play very loud, the RM30s, with a tweeter, three midrange panels, and four 6 ½" drivers (two active and two passive), at concert hall sound levels can move a lot more air without having to work as hard.

So is the A-17-M a good speaker or a bad speaker. For your US$3500 you are essentially getting two stereo amplifiers, and two pairs of speaker cables plus the speakers themselves. Assuming the two stereo amps are worth US$500 each and the two pairs of speaker cables are worth US$250 each, the A-17-Ms are US$2000 speakers. In comparison with the US$2000 speakers that I have heard recently I think the A-17-Ms do very well. They throw a wide and deep sound stage. They image well. While they respond to care in placement, they can be placed almost anywhere without seriously degrading the sound. They provide incredible detail for a speaker at this price point. They will play just fine in a very small listening room or in a medium sized one. The plug 'n' play convenience of these speakers is also very nice. With these powered speakers if you have a CD player with a volume control, a pair of interconnects, and two power cords you are ready to play music.

I listened to the A-17-Ms for over 200 hours. If they were the only speaker that I had, I could live with them since they do many of the things that are essential to me: accuracy, dynamics, detail, and the ability to convey the emotion of music. If you get the chance to hear the A-17-Ms I recommend that you do so (2). **Roger S. Gordon**

A-17-M Loudspeakers
Retail: $3500 a pair

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USA Distributor

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(1) List of CD tracks used for critical listening:

Grand Chorale by Georges Delerue. Soundtrack from Truffaut's Day for Night. Silva Screen Records SILCD1207, The European Film Music Collection.

Inner Universe (extended Version) by Yoko Kanno. Soundtrack from Ghost in the Shell: Stand Alone Complex (this is the first of four soundtrack CDs from the TV series). Bandai Entertainment 25199 ISBN 1-54909-336-9.

The Grindhouse Blues by Robert Rodriguez. Soundtrack from Rodriguez's movie Planet Terror. Varese Sarabande ASIN: B000NJL07K.

Main Theme by Phillippe Sarde. Soundtrack from Alain Corneau's film Fort Saganne. Silva Screen Records SILCD1207, The European Film Music Collection.

Ebben? Ne Andro Lontano from Cantalani's opera La Wally. Silva Screen Records SILCD1207, The European Film Music Collection.

White Sandy Beach of Hawaii from Facing Future, Israel Kamakawiwo'ole. Mountain Apple Company ASIN: B00000JFG3.

Transylvania 1887 by Alan Silvestri. Soundtrack from the movie Van Helsing. Decca ASIN: B0001O3Y7Q

I did not win the Race by Alan Silvestri. Soundtrack from the movie Beowulf. Warner Brothers ASIN: B000WVUNXG

(2) If you do get a chance to audition the A-17-Ms I recommend that you hear them in comparison with their US$9000 big brother the A-25-M. I had a chance to do this at the distributor's demo room. The A-25-M speaker is a tri-amped three way system with three class G amps (170 watts + 80 watts + 50 watts - Class G is Class AB with rail switching for power efficiency (less heat)). The factory quoted a sustained sound pressure level for a pair of A-25-Ms at 121dB. The user manual contains warnings about possible hearing damage. While there is a family resemblance in the sound between the A-17-M and the A-25-M, the A-25-M is in a totally different league sound-wise, as it should be considering it is 2 ½ times more expensive.

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